



TITLE: Apparatus for the Automatic Distribution, One by One, of Publications Arranged in a Stack

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MAIN PATENT

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APPARATUS FOR THE AUTOMATIC DISTRIBUTION, ONE BY ONE, OF
PUBLICATIONS ARRANGED IN A STACK

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The object of the present invention is an apparatus for the automatic distribution, one by one, of publications such as newspapers and magazines arranged in a stack, e.g., in a feed hopper.

Such devices are already known for introducing stacked publications into a machine, one by one. However, their operating throughput is limited by the inertia of the individual units, which have an alternating or jerky movement. The purpose of the present invention is to make the operation more rapid and possible adjustment easier, depending on the thickness of the publication.

The apparatus is characterized by at least one element having two tables in the form of disk sectors, angularly integral with each other, coaxial and superposed, situated approximately in opposition and made to rotate under the stack of publications to be distributed, which they then support alternately, the upper table being introduced at each rotation into the base of the

stack so as to separate one copy of the publication, the latter then falling below the device upon passage over the recess of the lower table.

The attached drawing shows, by way of example, an embodiment of the device according to the invention for obtaining distribution of newspapers onto a conveyor belt for a subsequent operation.

Figure 1 shows its axial cross section.

Figure 2 shows a plan view.

Figure 3 is a variant comprised of two coupled ensembles viewed from the front.

Figure 4 is a plan view of the variant shown in Figure 3.

The device shown in Figure 1 comprises an assembly made to rotate by means of a wheel 1 fixed to a spindle 2 that can turn in a bearing 3. An upper table 4 in the form of a disk sector is solidly fixed to the spindle 2. A lower table 5, also in the form of a disk sector, can slide on the spindle 2. It (5) is made integral with a nut 7, which can slide in the spindle 2, by means of a rod 6 passing through the oblong openings 8 provided in the spindle 2 to permit axial displacement of the lower table 5, the nut 7 and the rod 6. A screw 9, axially immobilized in the spindle 2 by a cap 10 that partially covers it and that is fixed on the spindle 2, e.g., by one or several screws 11, is engaged in the nut 7 and upon being rotated acts to modify the axial position of the nut 7 and that of the lower table 5, which is integral with the nut. By means of this adjustment, the spacing between the upper table 4 and the lower table 5 can be modified and adapted to the thickness of a copy 15 of the publications 14 loaded on the device. The stack of publications to be distributed is outlined at 14 in Figure 2. This stack 14 is positioned above the device by a feed hopper represented schematically in the figure by two guides 13. The base of the stack 14 rests alternately on the tables 4 and 5, depending on their angular position during rotation.

Because the axial distance separating the tables 4 and 5 is adjusted to the thickness of a copy 15 and the stack 14 rests, e.g., on the lower table 5, rotation of the device progressively introduces the upper table 4 between the copy 15 at the base of the stack 14, and the next copy 16, i.e., beginning with the angle 12. By continuing the rotational movement, the copy 15, separated from the stack 14 by the upper table 4, remains in the gap between the tables 4 and 5, while the stack 14 becomes progressively supported by the upper table 4, and then this copy 15 drops below the device by clearing the recess that has the sector form of the lower table 5. During the last part of the rotation, the upper table 4 releases the base of the stack 14, this then dropping onto the lower table 5 which will support it, and a new cycle will begin.

Figures 3 and 4 show a variant comprising two coupled ensembles, turning in the opposite direction in a double bearing 17, forced synchronous rotation being assured by the shaft 19 and the couplings 18.

The stack of publications to be distributed 20 is simultaneously supported by the two assemblies. The function of the two assemblies is identical to that described previously, except for the penetration of the right upper table 21, which is introduced into the stack 20 at its center 22 and after introduction of the angle 23 of the left upper table 24. By means of its position and its separating action on the copy 25 that is at the base of the stack 20, the table 24 prepares and facilitates introduction of the table 21. The rest of the operation is the same, simultaneously for the two assemblies, as described with reference to Figures 1 and 2.

The device described permits rapid and quiet operation and a very simple adjustment to adapt it to another publication thickness, and the mounting of two coupled assemblies facilitates distribution of publications with a relatively large surface area.

Claim

Device for the automatic distribution, one by one, of stacked publications, characterized by at least one element comprising two tables (4 and 5) in disk sector form, angularly integral, coaxial and superposed, situated approximately in opposition and made to rotate under the stack (14) of publications to be distributed, which then support them alternately, the upper table (4) being introduced at each rotation into the base of the stack (14) in order to separate a copy (15) of the publication, the latter (15) then falling beneath the device upon passage over the recess of the lower table (5).

Subclaims

1. Device according to the claim, characterized in that the axial gap between the two tables (4 and 5) can be adjusted by means of a screw (9), axially immobilized, the rotation of which in the device displaces a nut (7) that is solidly fixed to the lower table (5).
2. Device according to the claim and Subclaim 1, characterized by two elements comprised of two tables, the two elements being coupled for synchronous rotation, the upper (21 and 24) and lower (26 and 27) tables being in the same respective planes, each element thus supporting a portion of the stack (20) of publications.
3. Device according to the claim and Subclaims 1 and 2, characterized by an arrangement that effects a successive penetration of the upper tables (21 and 24), the first (24) being introduced into the stack (20) at an angle of this stack (20) and the second (21) penetrating, with a certain delay relative to the first, through the side (22) of the stack (20) so as to continue the penetrating action of the first table (24).

